

FlyBy Math™ Alignment
High School Mathematics Core Content for Assessment
version 4.0 October 2005

Number Properties and Operations

Estimation

Content Statement

Estimation

MA-11-1.2.1a

Students will estimate solutions to problems with real numbers (including very large and very small quantities) in both real world and mathematical situations, and use the estimations to check for reasonable computational results.

FlyBy Math™ Activities

--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

--Predict outcomes and explain results of mathematical models and experiments.

Ratios and Proportional Reasoning

Content Statement

MA-11-1.4.1

Students will apply ratios, percents, and proportional reasoning to solve real-world problems (e.g., those involving slope and rate, percent of increase and decrease) and will explain how slope determines a rate of change in linear functions representing real-world problems.

DOK - 2

FlyBy Math™ Activities

--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates.

--Interpret the slope of a line in the context of a distance-rate-time problem.

Measurement

Systems of Measurement

Content Statement

MA-11-2.2.1a

Students will continue to apply to both real world and mathematical situations U.S. customary and metric systems of measurement.

FlyBy Math™ Activities

--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation.

Geometry

Coordinate Geometry

Content Statement

MA-11-3.3.1

Students will apply algebra or graphing in the coordinate plane to analyze and solve problems (e.g., finding the final coordinates for a specified polygon, finding midpoints, finding the distance between two points, finding the slope of a segment).

DOK - 2

FlyBy Math™ Activities

--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates.

--Interpret the slope of a line in the context of a distance-rate-time problem.

Data Analysis & Probability

Data Representations

Content Statement

MA-11-4.1.1

Students will analyze and make inferences from a set of data with no more than two variables, and will analyze situations for the use and misuse of data representations.

DOK - 3

FlyBy Math™ Activities

--Represent distance, rate, and time data using tables, line plots, bar graphs, and line graphs.

--Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.

MA-11-4.1.2

Students will construct data displays for data with no more than two variables.

DOK - 2

--Represent distance, rate, and time data using tables, line plots, bar graphs, and line graphs.

Algebraic Thinking

Patterns, Relations, and Functions

Content Statement

MA-11-5.1.1

Students will identify and apply multiple representations (tables, graphs, equations) of functions (linear, quadratic, absolute value, exponential) to solve real-world or mathematical problems.

DOK - 2

FlyBy Math™ Activities

--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.

--Use tables, graphs, and equations to solve aircraft conflict problems.

MA-11-5.1.1b

Students will demonstrate how equations and graphs are models of the relationship between two real world quantities (e.g., the relationship between degrees Celsius and degrees Fahrenheit)

--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.

MA-11-5.1.3

Students will identify the changes and explain how changes in parameters affect graphs of functions (linear, quadratic, absolute value, exponential)

DOK - 2

--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates.

--Interpret the slope of a line in the context of a distance-rate-time problem.

Equations and Inequalities

Content Statement

MA-11-5.3.3

Students will model and graph systems of linear equations (two equations in two variables) and apply the system to solve and interpret real-world problems.

DOK - 3

FlyBy Math™ Activities

--Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system.